## CLAIMS

## What is claimed is:

1. A compound of formula (I):

$$\begin{array}{c|c}
(R^{17})_u & \underline{\underline{A}} \\
R^5 & N & \underline{\underline{A}} \\
R^{4'} & R^4 & R^{11}
\end{array}$$

(I)

or stereoisomers or pharmaceutically acceptable salts thereof, wherein:

A is selected from

$$(R^{18})_{u}$$
  $(CH_{2})_{t}$   $(CH_$ 

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G is selected from  $-C(O)R^3$ ,  $-C(O)NR^2R^3$ ,  $-C(O)OR^3$ ,  $-SO_2NR^2R^3$ ,  $-SO_2R^3$ ,  $-C(=S)NR^2R^3$ ,  $C(=NR^{1a})NR^2R^3$ ,  $C(=CHCN)NR^2R^3$ ,

- W, at each occurrence, is independently selected from C or N, provided at least two of W are C;
- X is selected from O, S, and NR<sup>19</sup>;
- ${\tt X^1}$  and  ${\tt X^2}$  are independently selected from C and N;
- $Z^1$  is selected from C and N;

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- 10  $Z^2$  is selected from  $NR^{1a}$ , O, S and C;
  - $R^1$  and  $R^2$  are independently selected from H,  $C_{1-8}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, and a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^a$ ;
- $R^{1a}$  is independently selected from H,  $C_{1-6}$  alkyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, and a  $(CH_2)_r-C_{3-10}$  carbocyclic residue substituted with 0-5  $R^a$ ;
- 20  $R^{a}$ , at each occurrence, is selected from  $C_{1-4}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_{2})_{r}C_{3-6}$  cycloalkyl, Cl, Br, I, F,  $(CF_{2})_{r}CF_{3}$ ,  $NO_{2}$ , CN,  $(CH_{2})_{r}NR^{b}R^{b}$ ,  $(CH_{2})_{r}OH$ ,  $(CH_{2})_{r}OR^{c}$ ,  $(CH_{2})_{r}SH$ ,  $(CH_{2})_{r}SR^{c}$ ,  $(CH_{2})_{r}C(O)R^{b}$ ,  $(CH_{2})_{r}C(O)NR^{b}R^{b}$ ,  $(CH_{2})_{r}NR^{b}C(O)R^{b}$ ,  $(CH_{2})_{r}C(O)OR^{b}$ ,  $(CH_{2})_{r}OC(O)R^{c}$ ,  $(CH_{2})_{r}CH(=NR^{b})NR^{b}R^{b}$ ,  $(CH_{2})_{r}NHC(=NR^{b})NR^{b}R^{b}$ ,  $(CH_{2})_{r}S(O)_{p}R^{c}$ ,  $(CH_{2})_{r}S(O)_{2}NR^{b}R^{b}$ ,  $(CH_{2})_{r}NR^{b}S(O)_{2}R^{c}$ , and  $(CH_{2})_{r}Phenyl$ ;
  - $R^b$ , at each occurrence, is selected from H,  $C_{1-6}$  alkyl,  $C_{3-6}$  cycloalkyl, and phenyl;
  - $R^{c}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{3-6}$  cycloalkyl, and phenyl;
- alternatively,  $R^2$  and  $R^3$  join to form a 5, 6, or 7-membered 35 ring substituted with 0-3  $R^a$ ;

- $R^3$  is selected from a  $(CR^3'R^3'')_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{15}$  and a  $(CR^3'R^3'')_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{15}$ ;
- $R^{3'}$  and  $R^{3''}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, and phenyl;
- 10  $R^4$  is hydrogen,  $C_{1-8}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_{r}C_{3-6} \text{ cycloalkyl, and a } (CH_2)_{\dot{r}}-C_{3-10} \text{ carbocyclic}$  residue substituted with 0-5  $R^a$ ;

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- alternatively,  $R^4$  joins with  $R^8$  or  $R^{11}$  to form a pyrrolidine or piperidine ring system substituted with 0-3  $R^{4d}$ ;
- R<sup>4'</sup> is absent, taken with the nitrogen to which it is attached to form an N-oxide, or selected from  $C_{1-8}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{3-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl,  $(CH_2)_qC(0)R^{4b}, (CH_2)_qC(0)NR^{4a}R^{4a'}, (CH_2)_qC(0)OR^{4a}, \text{ and a } (CH_2)_r-C_{3-10} \text{ carbocyclic residue substituted with 0-3}$   $R^{4c};$
- $R^{4a}$  and  $R^{4a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, and phenyl;
  - $R^{4b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $(CH_2)_rC_{3-6}$  cycloalkyl,  $C_{2-8}$  alkynyl, and phenyl;
- 30  $R^{4c}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{3-6}$  cycloalkyl,  $C_{1}$ , F, Br, I, CN,  $NO_{2}$ ,  $(CF_{2})_{r}CF_{3}$ ,  $(CH_{2})_{r}OC_{1-5}$  alkyl,  $(CH_{2})_{r}OH$ ,  $(CH_{2})_{r}SC_{1-5}$  alkyl,  $(CH_{2})_{r}NR^{4a}R^{4a'}$ , and  $(CH_{2})_{r}phenyl$ ;

 $R^{4d}$ , is selected from H,  $C_{1-6}$  alkyl,  $(CHR')_qOH$ ,  $(CHR')_qOR^{7a}$ ,  $(CHR')_qOC(O)R^{7b}$ ,  $(CHR')_qOC(O)NHR^{7a}$ ;

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- $R^5$  is selected from a  $(CR^{5'}R^{5''})_t$ - $C_{3-10310}$  carbocyclic residue substituted with 0-5  $R^{1616}$  and a  $(CR^{5'}R^{5''})t$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{1616}$ ;
- $R^{5'5}$  and  $R^{5''5}$ , at each occurrence, are selected from H,  $C_{1-616}$  alkyl,  $(CH_{22})_{r}C_{3-636}$  cycloalkyl, and phenyl;
- R<sup>7</sup>, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CHR')_qOH$ ,  $(CHR')_qSH$ ,  $(CHR')_qOR^{7d}$ ,  $(CHR')_qSR^{7d}$ ,  $(CHR')_qNR^{7a}R^{7a'}$ ,  $(CHR')_qC(O)OH$ ,  $(CHR')_rC(O)R^{7b}$ ,  $(CHR')_qC(O)NR^{7a}R^{7a'}$ ,  $(CHR')_qNR^{7a}C(O)R^{7a}$ ,  $(CHR')_qNR^{7a}C(O)H$ ,  $(CHR')_qC(O)OR^{7a}$ ,  $(CHR')_qOC(O)R^{7b}$ ,  $(CHR')_qS(O)_2NR^{7a}R^{7a'}$ ,  $(CHR')_qNR^{7a}S(O)_2R^{7b}$ ,  $(CHR')_qNHC(O)NR^{7a}R^{7a}$ ,  $(CHR')_qNHC(O)OR^{7a}$ ,  $(CHR')_qOC(O)NHR^{7a}$ ,  $(CHR')_qNHC(O)OR^{7a}$ ,  $(CHR')_qOC(O)NHR^{7a}$ ,  $(C_{1-6}$  haloalkyl, a  $(CHR')_r-C_{3-10}$ 20 carbocyclic residue substituted with 0-3  $R^{7c}$ , and a  $(CHR')_r-5-10$  membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{7c}$ ;
- 25  $R^{7a}$  and  $R^{7a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{7e}$ , and a  $(CH_2)_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{7e}$ ;
  - $R^{7b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{7e}$ , and a  $(CH_2)_r$ -5-6 membered

heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{7e}$ ;

- R<sup>7c</sup>, at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkenyl,  $(C_{2-8} C_{3-6} C_{3$
- $R^{7d}$ , at each occurrence, is selected from methyl,  $CF_3$ ,  $C_{2-6}$  alkyl substituted with 0-3  $R^{7e}$ , and a  $C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{7c}$ ;
- $R^{7e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{3-6}$  cycloalkyl, Cl, F, Br, I,  $(CF_2)_r CF_3, \ (CH_2)_r OC_{1-5} \ alkyl, \ (CH_2)_q OH, \ OH, \ (CH_2)_q SH, \ SH, \\ (CH_2)_r SC_{1-5} \ alkyl, \ (CH_2)_q NR^{7f}R^{7f}, \ and \ (CH_2)_r phenyl;$ 
  - $R^{7f}$ , at each occurrence, is selected from H,  $C_{1-6}$  alkyl, and  $C_{3-6}$  cycloalkyl;
  - $R^8$  is selected from H,  $C_{1-6}$  alkyl,  $C_{3-6}$  cycloalkyl, and  $(CH_2)_r$ phenyl substituted with 0-3  $R^{8a}$ ;

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R<sup>8a</sup>, at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{3-6}$  cycloalkyl, Cl, F, Br, I, CN, NO<sub>2</sub>,  $(CF_2)_rCF_3$ ,  $(CH_2)_rOC_{1-5}$  alkyl, OH, SH,  $(CH_2)_rSC_{1-5}$  alkyl,  $(CH_2)_rNR^{7f}R^{7f}$ , and  $(CH_2)_rphenyl$ ;

alternatively,  $R^7$  and  $R^8$  join to form  $C_{3-7}$  cycloalkyl, or =NR<sup>8b</sup>;

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 $\rm R^{8b}$  is selected from H,  $\rm C_{1-6}$  alkyl,  $\rm C_{3-6}$  cycloalkyl, OH, CN, and  $(\rm CH_2)_{\,r}\text{-phenyl}\,;$ 

R<sup>11</sup>, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_qOH$ ,  $(CH_2)_qSH$ ,  $(CH_2)_qOR^{11d}$ ,  $(CH_2)_qSR^{11d}$ ,  $(CH_2)_qNR^{11a}R^{11a'}$ ,  $(CH_2)_rC(O)OH$ ,  $(CH_2)_rC(O)R^{11b}$ ,  $(CH_2)_rC(O)NR^{11a}R^{11a'}$ ,  $(CH_2)_qNR^{11a}C(O)R^{11b}$ ,  $(CH_2)_qNR^{11a}C(O)NR^{11a}$ ,  $(CH_2)_qNR^{11a}C(O)NR^{11a}$ ,  $(CH_2)_qS(O)_pR^{11b}$ ,  $(CH_2)_qS(O)_2NR^{11a}R^{11a'}$ ,  $(CH_2)_qNR^{11a}S(O)_2R^{11b}$ ,  $C_{1-6}$  haloalkyl, a  $(CH_2)_r-C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{11c}$ , and a  $(CH_2)_r-5-10$  membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{11c}$ ;

 $R^{11a}$  and  $R^{11a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{11e}$ , and a  $(CH_2)_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{11e}$ ;

 $R^{11b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{11e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{11e}$ ;

R<sup>11c</sup>, at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, Cl, Br, I, F,  $(CF_2)_rCF_3$ ,  $NO_2$ , CN,  $(CH_2)_rNR^{11f}R^{11f}$ ,  $(CH_2)_rOH$ ,  $(CH_2)_rOC_{1-4}$  alkyl,  $(CH_2)_rSC_{1-4}$  alkyl,  $(CH_2)_rC(O)OH$ ,  $(CH_2)_rC(O)R^{11b}$ ,  $(CH_2)_rC(O)NR^{11f}R^{11f}$ ,  $(CH_2)_rNR^{11f}C(O)R^{11a}$ ,  $(CH_2)_rC(O)OC_{1-4}$  alkyl,  $(CH_2)_rOC(O)R^{11b}$ ,  $(CH_2)_rC(=NR^{11f})NR^{11f}R^{11f}$ ,  $(CH_2)_rNHC(=NR^{11f})NR^{11f}R^{11f}$ ,  $(CH_2)_rS(O)_pR^{11b}$ ,  $(CH_2)_rS(O)_2NR^{11f}R^{11f}$ ,  $(CH_2)_rNR^{11f}S(O)_2R^{11b}$ , and  $(CH_2)_r$ phenyl substituted with 0-3  $R^{11e}$ ;

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 $R^{11d}$ , at each occurrence, is selected from methyl,  $CF_3$ ,  $C_{2-6}$  alkyl substituted with 0-3  $R^{11e}$ ,  $C_{3-6}$  alkenyl,  $C_{3-6}$  alkynyl, and a  $C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{11c}$ ;

R<sup>11e</sup>, at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{3-6}$  cycloalkyl, Cl, F, Br, I, CN, NO<sub>2</sub>,  $(CF_2)_rCF_3$ ,  $(CH_2)_rOC_{1-5}$  alkyl, OH, SH,  $(CH_2)_rSC_{1-5}$  alkyl,  $(CH_2)_rNR^{11f}R^{11f}$ , and  $(CH_2)_rphenyl$ ;

 $\mbox{R}^{11f},$  at each occurrence, is selected from H,  $C_{1-6}$  alkyl, and  $$C_{3-6}$$  cycloalkyl;

25  $R^{15}$ , at each occurrence, is selected from  $C_{1-8}$  alkyl,  $(CH_2)_rC_{3-6} \text{ cycloalkyl}, Cl, Br, I, F, NO_2, CN,$   $(CHR')_rNR^{15a}R^{15a'}, (CHR')_rOH, (CHR')_rO(CHR')_rR^{15d},$   $(CHR')_rSH, (CHR')_rC(O)H, (CHR')_rS(CHR')_rR^{15d},$   $(CHR')_rC(O)OH, (CHR')_rC(O)(CHR')_rR^{15b},$   $(CHR')_rC(O)NR^{15a}R^{15a'}, (CHR')_rNR^{15f}C(O)(CHR')_rR^{15b},$   $(CHR')_rNR^{15f}C(O)NR^{15a}R^{15a'}, (CHR')_rC(O)O(CHR')_rR^{15d},$   $(CHR')_rOC(O)(CHR')_rR^{15b}, (CHR')_rC(=NR^{15f})NR^{15a}R^{15a'},$   $(CHR')_rNHC(=NR^{15f})NR^{15a}R^{15a'}, (CHR')_rS(O)_p(CHR')_rR^{15b},$ 

(CHR') $_{r}$ S(O) $_{2}$ NR<sup>15a</sup>R<sup>15a'</sup>, (CHR') $_{r}$ NR<sup>15f</sup>S(O) $_{2}$ (CHR') $_{r}$ R<sup>15b</sup>, C<sub>1-6</sub> haloalkyl, C<sub>2-8</sub> alkenyl substituted with 0-3 R', C<sub>2-8</sub> alkynyl substituted with 0-3 R', (CHR') $_{r}$ phenyl substituted with 0-3 R<sup>15e</sup>, and a (CH $_{2}$ ) $_{r}$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2 R<sup>15e</sup>;

R', at each occurrence, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, and  $(CH_2)_r$ phenyl substituted with  $R^{15e}$ ;

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- $R^{15a}$  and  $R^{15a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{15e}$ , and a  $(CH_2)_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ;
- $R^{15b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-3  $R^{15e}$ , and  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, 0, and S, substituted with 0-2  $R^{15e}$ ;
- 25  $R^{15d}$ , at each occurrence, is selected from  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, methyl,  $CF_3$ ,  $C_{2-6}$  alkyl substituted with 0-3  $R^{15e}$ , a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{15e}$ , and a  $(CH_2)_r$ 5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{15e}$ ;
  - $R^{15e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, Cl, F, Br,

I, CN, NO<sub>2</sub>,  $(CF_2)_rCF_3$ ,  $(CH_2)_rOC_{1-5}$  alkyl, OH, SH,  $(CH_2)_rSC_{1-5} \text{ alkyl}, (CH_2)_rNR^{15f}R^{15f}, \text{ and } (CH_2)_rphenyl;$ 

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 $R^{15f}$ , at each occurrence, is selected from H,  $C_{1-6}$  alkyl,  $C_{3-6}$  5 \ cycloalkyl, and phenyl;

R<sup>16</sup>, at each occurrence, is selected from  $C_{1-8}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, Cl, Br, I, F,  $NO_2$ , CN,  $(CHR')_rNR^{16a}R^{16a'}$ ,  $(CHR')_rOH$ ,

(CHR')\_rO(CHR')\_rR^{16d},  $(CHR')_rSH$ ,  $(CHR')_rC(O)H$ ,  $(CHR')_rS(CHR')_rR^{16d}$ ,  $(CHR')_rC(O)OH$ ,  $(CHR')_rC(O)(CHR')_rR^{16b}$ ,  $(CHR')_rC(O)NR^{16a}R^{16a'}$ ,  $(CHR')_rNR^{16f}C(O)(CHR')_rR^{16b}$ ,  $(CHR')_rC(O)O(CHR')_rR^{16d}$ ,  $(CHR')_rOC(O)(CHR')_rR^{16b}$ ,  $(CHR')_rC(=NR^{16f})NR^{16a}R^{16a'}$ ,  $(CHR')_rNHC(=NR^{16f})NR^{16a}R^{16a'}$ ,  $(CHR')_rS(O)_2NR^{16a}R^{16a'}$ ,  $(CHR')_rNR^{16f}S(O)_2(CHR')_rR^{16b}$ ,  $(CHR')_rS(O)_2NR^{16a}R^{16a'}$ ,  $(CHR')_rNR^{16f}S(O)_2(CHR')_rR^{16b}$ ,  $C_{1-6}$  haloalkyl,  $C_{2-8}$  alkenyl substituted with 0-3 R',  $C_{2-8}$  alkynyl substituted with 0-3 R', and  $(CHR')_r$ phenyl substituted with 0-3 R<sup>16e</sup>;

 $R^{16a}$  and  $R^{16a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, a  $(CH_2)_T$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{16e}$ , and a  $(CH_2)_T$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{16e}$ ;

 $R^{16b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl, a  $(CH_2)_rC_{3-6}$  carbocyclic residue substituted with 0-3  $R^{16e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{16e}$ ;

 $R^{16d}$ , at each occurrence, is selected from  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, methyl,  $CF_3$ ,  $C_{2-6}$  alkyl substituted with 0-3  $R^{16e}$ , a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{16e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{16e}$ ;

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- $R^{16e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, Cl, F, Br, I, CN,  $NO_2$ ,  $(CF_2)_rCF_3$ ,  $(CH_2)_rOC_{1-5}$  alkyl, OH, SH,  $(CH_2)_rSC_{1-5}$  alkyl,  $(CH_2)_rNR^{16f}R^{16f}$ , and  $(CH_2)_rphenyl$ ;
  - $R^{16f}$ , at each occurrence, is selected from H,  $C_{1-5}$  alkyl, and  $C_{3-6}$  cycloalkyl, and phenyl;
- R<sup>17</sup>, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_qOH$ ,  $(CH_2)_qSH$ ,  $(CH_2)_qOR^{17d}$ ,  $(CH_2)_qSR^{17d}$ ,  $(CH_2)_qNR^{17a}R^{17a'}$ ,  $(CH_2)_rC(O)OH$ ,  $(CH_2)_rC(O)R^{17b}$ ,  $(CH_2)_rC(O)NR^{17a}R^{17a'}$ ,  $(CH_2)_qNR^{17a}C(O)R^{17b}$ ,  $(CH_2)_qNR^{17a}C(O)H$ ,  $(CH_2)_rC(O)OR^{17a}$ ,  $(CH_2)_qOC(O)R^{17b}$ ,  $(CH_2)_qS(O)_pR^{17b}$ ,  $(CH_2)_qS(O)_2NR^{17a}R^{17a'}$ ,  $(CH_2)_qNR^{17a}S(O)_2R^{17b}$ ,  $C_{1-6}$  haloalkyl, a  $(CH_2)_r-C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{17c}$ , and a  $(CH_2)_r-5-10$  membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{17c}$ ;
- $R^{17a}$  and  $R^{17a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{17e}$ , and a  $(CH_2)_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{17e}$ ;

 $R^{17b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{17e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{17e}$ ;

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- $R^{17c}, \text{ at each occurrence, is selected from $C_{1-6}$ alkyl, $C_{2-8}$ alkenyl, $C_{2-8}$ alkynyl, $(CH_2)_rC_{3-6}$ cycloalkyl, $Cl$, $Br$, $I$, $F$, $(CF_2)_rCF_3$, $NO_2$, $CN$, $(CH_2)_rNR^{17f}R^{17f}$, $(CH_2)_rOH$, $(CH_2)_rOC_{1-4}$ alkyl, $(CH_2)_rSC_{1-4}$ alkyl, $(CH_2)_rC(O)OH$, $(CH_2)_rC(O)R^{17b}$, $(CH_2)_rC(O)NR^{17f}R^{17f}$, $(CH_2)_rNR^{17f}C(O)R^{17a}$, $(CH_2)_rC(O)OC_{1-4}$ alkyl, $(CH_2)_rOC(O)R^{17b}$, $(CH_2)_rC(=NR^{17f})NR^{17f}R^{17f}$, $(CH_2)_rS(O)_pR^{17b}$, $(CH_2)_rNHC(=NR^{17f})NR^{17f}R^{17f}$, $(CH_2)_rS(O)_2NR^{17f}R^{17f}$, $(CH_2)_rNHC^{17f}S(O)_2R^{17b}$, and $(CH_2)_rPhenyl$ substituted with $0-3$ $R^{17e}$; $$$
- $R^{17d}$ , at each occurrence, is selected from methyl,  $CF_3$ ,  $C_{2-6}$  alkyl substituted with 0-3  $R^{17e}$ ,  $C_{3-6}$  alkenyl,  $C_{3-6}$  alkynyl, and a  $C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{17c}$ ;
- $R^{17e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{3-6}$  cycloalkyl,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{2}$ ,  $C_{1}$ ,  $C_{2}$ ,  $C_{2}$ ,  $C_{2}$ ,  $C_{3}$ ,  $C_{1}$ ,  $C_{2}$ ,  $C_{3}$ ,  $C_{1-5}$  alkyl,  $C_{2}$ ,  $C_{3}$ ,  $C_{3}$ ,  $C_{3}$ ,  $C_{3}$ , and  $C_{4}$ ,  $C_{4}$ ,
  - $R^{17f}$ , at each occurrence, is selected from H,  $C_{1-6}$  alkyl, and  $C_{3-6}$  cycloalkyl;
  - R<sup>18</sup>, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CHR')_qOH$ ,  $(CHR')_qSH$ ,  $(CHR')_qOR^{18d}$ ,  $(CHR')_qSR^{18d}$ ,  $(CHR')_qNR^{18a}R^{18a'}$ ,  $(CHR')_rC(O)OH$ ,  $(CHR')_rC(O)R^{18b}$ ,  $(CHR')_rC(O)NR^{18a}R^{18a'}$ ,

 $(CHR')_qNR^{18a}C(0)R^{18a}, \quad (CHR')_qNR^{18a}C(0)H, \quad (CHR')_rC(0)OR^{18a}, \\ (CHR')_qOC(0)R^{18b}, \quad (CHR')_qS(0)_pR^{18b}, \quad (CHR')_qS(0)_2NR^{18a}R^{18a'}, \\ (CHR')_qNR^{18a}S(0)_2R^{18b}, \quad C_{1-6} \text{ haloalkyl}, \quad a \quad (CHR')_r-C_{3-10} \\ carbocyclic residue substituted with 0-3 R^{18c}, \quad and \quad a \\ (CHR')_r-5-10 \text{ membered heterocyclic system containing 1-4} \\ \text{heteroatoms selected from N, O, and S, substituted with 0-2 R^{18c}; }$ 

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 $R^{18a}$  and  $R^{18a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl, a  $(CH_2)_r$ - $C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{18e}$ , and a  $(CH_2)_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{18e}$ ;

 $\rm R^{18b},$  at each occurrence, is selected from  $\rm C_{1-6}$  alkyl,  $\rm C_{2-8}$  alkenyl,  $\rm C_{2-8}$  alkynyl, a  $\rm (CH_2)_r$ - $\rm C_{3-6}$  carbocyclic residue substituted with 0-2  $\rm R^{18e},$  and a  $\rm (CH_2)_r$ -5-6 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $\rm R^{18e};$ 

R<sup>18c</sup>, at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl, Cl, Br, I, F,  $(CF_2)_rCF_3$ ,  $NO_2$ , CN,  $(CH_2)_rNR^{18f}R^{18f}$ ,  $(CH_2)_rOH$ ,  $(CH_2)_rOC_{1-4}$  alkyl,  $(CH_2)_rSC_{1-4}$  alkyl,  $(CH_2)_rC(O)OH$ ,  $(CH_2)_rC(O)R^{18b}$ ,  $(CH_2)_rC(O)NR^{18f}R^{18f}$ ,  $(CH_2)_rNR^{18f}C(O)R^{18a}$ ,  $(CH_2)_rC(O)OC_{1-4}$  alkyl,  $(CH_2)_rOC(O)R^{18b}$ ,  $(CH_2)_rC(=NR^{18f})NR^{18f}R^{18f}$ ,  $(CH_2)_rS(O)_pR^{18b}$ ,  $(CH_2)_rNHC(=NR^{18f})NR^{18f}R^{18f}$ ,  $(CH_2)_rS(O)_2NR^{18f}R^{18f}$ ,  $(CH_2)_rNR^{18f}S(O)_2R^{18b}$ , and  $(CH_2)_r$ phenyl substituted with 0-3  $R^{18e}$ ;

 $R^{18d}$ , at each occurrence, is selected from methyl,  $CF_3$ ,  $C_{2-6}$  alkyl substituted with 0-3  $R^{18e}$ ,  $C_{3-6}$  alkenyl,  $C_{3-6}$ 

alkynyl, and a  $C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{18c}$ ;

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 $R^{18e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{3-6}$  cycloalkyl,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{1}$ ,  $C_{2}$ ,  $C_{2}$ ,  $C_{3}$ ,  $C_{1}$ ,  $C_{2}$ ,  $C_{3}$ ,  $C_{1}$ ,  $C_{3}$ ,  $C_{3}$ ,  $C_{3}$ ,  $C_{4}$ ,  $C_{5}$ , C

 $R^{18f}$ , at each occurrence, is selected from H,  $C_{1-6}$  alkyl, and  $C_{3-6}$  cycloalkyl;

 $R^{19}$  is selected from  $C_{1-8}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl,  $-C(0)R^{19b}$ ,  $-C(0)NR^{19a}R^{19a}$ ,  $-C(0)OR^{19a}$ , and  $-SO_2R^{19a}$ , a  $(CHR')_r-C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{16}$ , and a  $(CHR')_r-5-10$  membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{16}$ ;

 $R^{19a}$  is selected from  $C_{1-8}$  alkyl,  $C_{3-8}$  alkenyl,  $C_{3-8}$  alkynyl,  $C_{3-6}$  cycloalkyl, a  $(CR^{5'5}R^{5''})_t$ - $C_{3-10310}$  carbocyclic residue substituted with 0-5  $R^{1516}$  and a  $(CR^{5'5}R^{5''5})_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{1616}$ ;

 $\rm R^{19b}$  is selected from H,  $\rm C_{1-8}$  alkyl,  $\rm C_{3-8}$  alkenyl,  $\rm C_{3-8}$  alkynyl,  $\rm C_{3-6}$  cycloalkyl, a (CR $^{5'}$ R $^{5''}$ )  $_{t}$ -C $_{3-10310}$  carbocyclic residue substituted with 0-5 R $^{1516}$  and a (CR $^{5'}$ R $^{5''}$ )  $_{r}$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3 R $^{1616}$ ;

m, at each occurrence, is selected from 1, 2, 3, 4, and 5;

n, at each occurrence, is selected from 0, 1, 2, 3, 4, and 5;

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- o, at each occurrence, is selected from 1 and 2;
- 5 p, at each occurrence, is selected from 1 and 2;

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- r, at each occurrence, is selected from 0, 1, 2, 3, 4, and 5;
- q, at each occurrence, is selected from 1, 2, 3, 4, and 5;
- s, at each occurrence, is selected from 0, 1, and 2;
  - t, at each occurrence, is selected from 0, 1, 2, 3, 4, and 5;
- - v, at each occurrence, is selected from 0 and 1; and
- 20 w, at each occurrence, is selected from 0, 1, 2, and 3.
  - 2. The compound of claim 1, wherein:
- R<sup>4'</sup> is absent or, taken with the nitrogen to which it is attached to form an N-oxide;
- R<sup>7</sup>, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CHR')_qOH$ ,  $(CHR')_qOR^{7d}$ ,  $(CHR')_qNR^{7a}R^{7a'}$ ,  $(CHR')_qC(O)R^{7b}$ ,  $(CHR')_qC(O)NR^{7a}R^{7a'}$ ,  $(CHR')_qNR^{7a}C(O)R^{7b}$ ,  $(CHR')_qNR^{7a}C(O)H$ ,  $(CHR')_qS(O)_2NR^{7a}R^{7a'}$ ,  $(CHR')_qNR^{7a}S(O)_2R^{7b}$ ,  $(CHR')_qNHC(O)NHR^{7a}$ ,  $(CHR')_qNHC(O)OR^{7a}$ ,  $(CHR')_qOC(O)NHR^{7a}$ ,  $C_{1-6}$  haloalkyl, a  $(CHR')_r-C_{3-10}$  carbocyclic residue substituted with 0-3  $R^{7c}$ , and a  $(CHR')_r-5-10$  membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{7c}$ ;

alternatively,  $R^7$  and  $R^8$  join to form  $C_{3-7}$  cycloalkyl, or =NR<sup>8b</sup>;

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R<sup>11</sup>, is selected from H,  $C_{1-6}$  alkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_qOH$ ,  $(CH_2)_qOR^{11d}$ ,  $(CH_2)_qNR^{11a}R^{11a'}$ ,  $(CH_2)_rC(O)R^{11b}$ ,  $(CH_2)_rC(O)R^{11a}R^{11a'}$ ,  $(CH_2)_qNR^{11a}C(O)R^{11b}$ ,  $(CH_2)_qNR^{11a}C(O)NHR^{11a}$ ,  $(CH_2)_qNHC(O)NHR^{11a}$ ,  $(CH_2)_qNHC(O)NHR^{11a}$ ,  $(CH_2)_qNHC(O)OR^{11a}$ ,  $(CH_2)_qOC(O)NHR^{11a}$ ,  $C_{1-6}$  haloalkyl, a  $(CH_2)_r-C_{3-10}$  carbocyclic residue substituted with 0-5  $R^{11c}$ , and a  $(CH_2)_r-5-10$  membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-3  $R^{11c}$ .

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3. The compound of claim 2, wherein:

A is selected from

$$(R^{18})_{u} (CH_{2})_{t}$$

$$(CH_{2})_{t} (CH_{2})_{t}$$

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t is selected from 0, 1, and 2.

4. The compound of claim 3, wherein:

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 $R^{17}$  is selected from H; and

R<sup>18</sup> is selected from H.

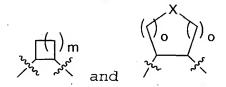
- 5. The compound of claim 4, wherein:
- A is selected from

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- 6. The compound of claim 5, wherein:
- G is selected from  $-C(0)R^3$ ,  $-C(0)NR^2R^3$ ,  $-C(0)OR^3$ ,  $-SO_2NR^2R^3$ , and  $-SO_2R^3$ ,  $-C(=S)NR^2R^3$ ,  $C(=NR^{1a})NR^2R^3$ ,  $C(=CHCN)NR^2R^3$ ,

$$C (=CHNO_2) NR^2R^3$$
,  $C (=C (CN)_2) NR^2R^3$ , and  $NR^2R^3$ .

- 7. The compound of claim 6, wherein:
- 15 G is selected from  $-C(0)NR^2R^3$ ,  $^{23}C(=NR^{1a})NR^2R^3$ ,  $C(=CHCN)NR^2R^3$ ,  $C(=CHNO_2)NR^2R^3$ , and  $C(=C(CN)_2)NR^2R^3$ ;
  - 8. The compound of claim 7, wherein:

R<sup>16</sup>, at each occurrence, is selected from methyl, ethyl, propyl, iso-propyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{2-8}$  alkynyl,  $C_{2-8}$  alkynyl,  $C_{2-8}$  alkenyl,  $C_{2-$ 

 $R^{16a}$  and  $R^{16a'}$ , at each occurrence, are selected from H, methyl, ethyl, and a  $(CH_2)_{r}$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{16e}$ ;

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- 5 R<sup>16e</sup>, at each occurrence, is selected from methyl, ethyl, Cl, F, Br, I, CN, CF<sub>3</sub>, and OCH<sub>3</sub>;
  - ${\bf R}^{\rm 16f}$ , at each occurrence, is selected from H; and
- 10 r is selected from 0, 1, and 2.

- 9. The compound of claim 8, wherein:
- R<sup>3</sup> is selected from a  $(CR^{3'}R^{3''})_{r}$ - $C_{3-6}$  carbocyclic residue 15 substituted with 0-2 R<sup>15</sup> and a  $(CR^{3'}CR^{3''})_{r}$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2 R<sup>15</sup>;
  - ${\bf R}^{3}{}^{\prime}$  and  ${\bf R}^{3}{}^{\prime\prime}$ , at each occurrence, are selected from H;
- R<sup>15</sup>, at each occurrence, is selected from  $C_{1-8}$  alkyl,  $(CH_2)_rC_{3-6} \ \, \text{cycloalkyl}, \ \, Cl, \ \, \text{Br, F, CN, } \ \, (\text{CHR'})_r\text{NR}^{15a}\text{R}^{15a'}, \\ (CHR')_r\text{OH, } \ \, (\text{CHR'})_r\text{O(CHR'})_r\text{R}^{15d}, \ \, (\text{CHR'})_r\text{C(O)} \ \, (\text{CHR'})_r\text{R}^{15b}, \\ (CHR')_r\text{C(O)} \ \, \text{NR}^{15a}\text{R}^{15a'}, \ \, (\text{CHR'})_r\text{NR}^{15f}\text{C(O)} \ \, (\text{CHR'})_r\text{R}^{15b}, \\ (CHR')_r\text{NR}^{15f}\text{C(O)} \ \, \text{NR}^{15f}\text{R}^{15f}, \ \, (\text{CHR'})_r\text{C(O)} \ \, (\text{CHR'})_r\text{R}^{15d}, \\ (CHR')_r\text{OC(O)} \ \, (\text{CHR'})_r\text{R}^{15b}, \ \, (\text{CHR'})_r\text{S(O)}_p \ \, (\text{CHR'})_r\text{R}^{15b}, \\ (CHR')_r\text{S(O)}_2\text{NR}^{15a}\text{R}^{15a'}, \ \, (\text{CHR'})_r\text{NR}^{15f}\text{S(O)}_2 \ \, (\text{CHR'})_r\text{R}^{15b}, \\ (CHR')_r\text{S(O)}_2\text{NR}^{15a}\text{R}^{15a'}, \ \, (\text{CHR'})_r\text{NR}^{15f}\text{S(O)}_2 \ \, (\text{CHR'})_r\text{R}^{15b}, \\ \text{alkynyl substituted with } 0-3 \ \text{R'}, \ \, (\text{CHR'})_r\text{phenyl} \\ \text{substituted with } 0-3 \ \text{R}^{15e}, \ \, \text{and a} \ \, (\text{CH}_2)_r-5-10 \ \, \text{membered} \\ \text{heterocyclic system containing } 1-4 \ \, \text{heteroatoms selected} \\ \text{from N, O, and S, substituted with } 0-2 \ \, \text{R}^{15e}; \\ \end{cases}$ 
  - $\mbox{R}^{'}\,,$  at each occurrence, is selected from H, and  $\mbox{C}_{1\text{-}6}$  alkyl;

- $R^{15a}$  and  $R^{15a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-5  $R^{15e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ;
- $R^{15b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-3  $R^{15e}$ , and  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ; and
- $R^{15e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, Cl, F, Br, I, CN,  $(CF_2)_{\,\rm r}CF_3$ , and OH.
  - 10. The compound of claim 5, wherein:

20 11. The compound of claim 10, wherein:

 $R^1$  is selected from H;

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both  $X^1$  and  $X^2$  cannot be C; and

 $\mathbf{Z}^2$  is selected from  $\mathtt{NR}^{1}{}'$  , O, and S.

- 12. The compound of claim 11, wherein:
- 30 R<sup>16</sup>, at each occurrence, is selected from methyl, ethyl, propyl, iso-propyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, (CH<sub>2</sub>)<sub>r</sub>C<sub>3-6</sub> cycloalkyl, Cl, Br, I, F, NO<sub>2</sub>, CN, (CHR')<sub>r</sub>NR<sup>16a</sup>R<sup>16a'</sup>, (CHR')<sub>r</sub>OH, (CHR')<sub>r</sub>O(CHR')<sub>r</sub>R<sup>16d</sup>, (CHR')<sub>r</sub>C(O)(CHR')<sub>r</sub>R<sup>16b</sup>,

 $\label{eq:chr'} \mbox{(CHR')$_r$C(0)$NR$^{16a}R$^{16a'}$, $(CHR')$_r$NR$^{16f}C(0)$ (CHR')$_r$R$^{16b}$, $(CHR')$_r$S(0)$_2$NR$^{16a}R$^{16a'}$, $(CHR')$_r$NR$^{16f}S(0)$_2$ (CHR')$_r$R$^{16b}$, $C$_{1-6}$ haloalkyl$, and $(CHR')$_r$phenyl substituted with 0-3 $R$^{16e}$; }$ 

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 $R^{16a}$  and  $R^{16a'}$ , at each occurrence, are selected from H, methyl, ethyl, and a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{16e}$ ;

10 R<sup>16e</sup>, at each occurrence, is selected from methyl, ethyl, Cl, F, Br, I, CN, CF<sub>3</sub>, and OCH<sub>3</sub>;

R<sup>16f</sup>, at each occurrence, is selected from H; and

15 r is selected from 0, 1, and 2.

13. The compound of claim 12, wherein:

R<sup>15</sup>, at each occurrence, is selected from  $C_{1-8}$  alkyl,  $(CH_2)_rC_{3-6} \text{ cycloalkyl}, Cl, Br, F, CN, (CHR')_rNR^{15a}R^{15a'}, \\ (CHR')_rOH, (CHR')_rO(CHR')_rR^{15d}, (CHR')_rC(O)(CHR')_rR^{15b}, \\ (CHR')_rC(O)NR^{15a}R^{15a'}, (CHR')_rNR^{15f}C(O)(CHR')_rR^{15b}, \\ (CHR')_rNR^{15f}C(O)NR^{15f}R^{15f}, (CHR')_rC(O)O(CHR')_rR^{15d}, \\ (CHR')_rOC(O)(CHR')_rR^{15b}, (CHR')_rS(O)_p(CHR')_rR^{15b}, \\ (CHR')_rS(O)_2NR^{15a}R^{15a'}, (CHR')_rNR^{15f}S(O)_2(CHR')_rR^{15b}, C_{1-6} \\ \text{haloalkyl}, C_{2-8} \text{ alkenyl}, C_{2-8} \text{ alkynyl}, (CHR')_rphenyl \\ \text{substituted with 0-3 } R^{15e}, \text{ and a } (CH_2)_r-5-10 \text{ membered} \\ \text{heterocyclic system containing 1-4 heteroatoms selected} \\ \text{from N, O, and S, substituted with 0-2 } R^{15e};$ 

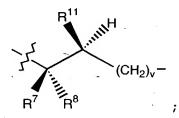
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R', at each occurrence, is selected from H, and  $C_{1-6}$  alkyl;

 $R^{15a}$  and  $R^{15a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted

with 0-5  $R^{15e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ;

- 5  $R^{15b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-3  $R^{15e}$ , and  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ; and
  - $R^{15e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, Cl, F, Br, I, CN,  $(CF_2)_rCF_3$ , and OH.
    - 14. The compound of claim 2, wherein:



A is selected from

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v is selected from 0 and 1.

- 20 15. The compound of claim 14, wherein:
  - G is selected from  $-C(O)R^3$ ,  $-C(O)NR^2R^3$ ,  $-C(O)OR^3$ ,  $-SO_2NR^2R^3$ , and  $-SO_2R^3$ ,  $-C(=S)NR^2R^3$ ,  $C(=NR^{1a})NR^2R^3$ ,  $C(=CHCN)NR^2R^3$ ,

$$C = CHNO_2$$
)  $NR^2R^3$ ,  $C = C (CN)_2$ )  $NR^2R^3$ , and  $NR^2R^3$ 

16. The compound of claim 15, wherein:

G is selected from  $-C(0)NR^2R^3$ ,  $^{23}C(=NR^{1a})NR^2R^3$ ,  $C(=CHCN)NR^2R^3$ ,  $C(=CHNO_2)NR^2R^3$ , and  $C(=C(CN)_2)NR^2R^3$ .

interior size.

17. The compound of claim 16, wherein:

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- R<sup>16</sup>, at each occurrence, is selected from methyl, ethyl, propyl, iso-propyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-6}$  cycloalkyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $C_{2-8}$  alkenyl,  $C_{2-$
- 15  $R^{16a}$  and  $R^{16a'}$ , at each occurrence, are selected from H, methyl, ethyl, and a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{16e}$ ;
- $R^{16e}$ , at each occurrence, is selected from methyl, ethyl, Cl, F, Br, I, CN, CF<sub>3</sub>, and OCH<sub>3</sub>;
  - $R^{16f}$ , at each occurrence, is selected from H; and r is selected from 0, 1, and 2.
    - 18. The compound of claim 17, wherein:
- $R^3$  is selected from a  $(CR^3'R^3'')_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{15}$  and a  $(CR^3'CR^{3''})_r$ -5-10 membered heterocyclic system containing 1-4 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15}$ 
  - $R^{3}{}^{\prime}$  and  $R^{3}{}^{\prime\prime}$ , at each occurrence, are selected from H;

R<sup>15</sup>, at each occurrence, is selected from  $C_{1-8}$  alkyl,  $(CH_2)_rC_{3-6} \text{ cycloalkyl}, Cl, Br, F, CN, (CHR')_rNR^{15a}R^{15a'}, \\ (CHR')_rOH, (CHR')_rO(CHR')_rR^{15d}, (CHR')_rC(O)(CHR')_rR^{15b}, \\ (CHR')_rC(O)NR^{15a}R^{15a'}, (CHR')_rNR^{15f}C(O)(CHR')_rR^{15b}, \\ (CHR')_rNR^{15f}C(O)NR^{15a}R^{15a'}, (CHR')_rC(O)O(CHR')_rR^{15d}, \\ (CHR')_rOC(O)(CHR')_rR^{15b}, (CHR')_rS(O)_p(CHR')_rR^{15b}, \\ (CHR')_rS(O)_2NR^{15a}R^{15a'}, (CHR')_rNR^{15f}S(O)_2(CHR')_rR^{15b}, C_{1-6} \\ haloalkyl, C_{2-8} alkenyl substituted with 0-3 R', C_{2-8} \\ alkynyl substituted with 0-3 R', (CHR')_rphenyl \\ substituted with 0-3 R^{15e}, and a (CH_2)_r-5-10 membered \\ heterocyclic system containing 1-4 heteroatoms selected \\ from N, O, and S, substituted with 0-2 R^{15e};$ 

A. 地位为为1000年间

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 $\mbox{R}^{\prime}\,,$  at each occurrence, is selected from H, and  $\mbox{C}_{1\text{--}6}$  alkyl;

 $R^{15a}$  and  $R^{15a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-5  $R^{15e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ;

- $R^{15b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-3  $R^{15e}$ , and  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ; and
- $R^{15e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, Cl, F, Br, I, CN,  $(CF_2)_r CF_3$ , and OH.
  - 19. The compound of claim 14, wherein:

20. The compound of claim 19, wherein: `

5  $R^1$  is H;

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both  $X^1$  and  $X^2$  cannot be C; and

 $Z^2$  is selected from  $NR^{1'}$ , O, and S.

21. The compound of claim 20, wherein:

R<sup>16</sup>, at each occurrence, is selected from methyl, ethyl, propyl, iso-propyl,  $C_{2-8}$  alkenyl,  $C_{2-8}$  alkynyl,  $(CH_2)_rC_{3-1}$  6 cycloalkyl, Cl, Br, I, F, NO<sub>2</sub>, CN,  $(CHR')_rNR^{16a}R^{16a'}$ ,  $(CHR')_rOH$ ,  $(CHR')_rO(CHR')_rR^{16d}$ ,  $(CHR')_rC(O)(CHR')_rR^{16b}$ ,  $(CHR')_rC(O)NR^{16a}R^{16a'}$ ,  $(CHR')_rNR^{16f}C(O)(CHR')_rR^{16b}$ ,  $(CHR')_rS(O)_p(CHR')_rR^{16b}$ ,  $(CHR')_rS(O)_2NR^{16a}R^{16a'}$ ,  $(CHR')_rNR^{16f}S(O)_2(CHR')_rR^{16b}$ ,  $C_{1-6}$  haloalkyl, and  $(CHR')_rphenyl$  substituted with 0-3  $R^{16e}$ ;

 $R^{16a}$  and  $R^{16a'}$ , at each occurrence, are selected from H, methyl, ethyl, and a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-2  $R^{16e}$ ;

 $\rm R^{16e},$  at each occurrence, is selected from methyl, ethyl, Cl, F, Br, I, CN, CF\_3, and OCH\_3;

 $R^{16f}$ , at each occurrence, is selected from H; and 30 r is selected from 0, 1, and 2.

22. The compound of claim 21, wherein:

R<sup>15</sup>, at each occurrence, is selected from  $C_{1-8}$  alkyl,  $(CH_2)_rC_{3-6} \ cycloalkyl, \ Cl, \ Br, \ F, \ CN, \ (CHR')_rNR^{15a}R^{15a'}, \\ (CHR')_rOH, \ (CHR')_rO(CHR')_rR^{15d}, \ (CHR')_rC(O) \ (CHR')_rR^{15b}, \\ (CHR')_rC(O) \ NR^{15a}R^{15a'}, \ (CHR')_rNR^{15f}C(O) \ (CHR')_rR^{15b}, \\ (CHR')_rNR^{15f}C(O) \ NR^{15a}R^{15a'}, \ (CHR')_rC(O)O(CHR')_rR^{15d}, \\ (CHR')_rOC(O) \ (CHR')_rR^{15b}, \ (CHR')_rS(O)_p(CHR')_rR^{15b}, \\ (CHR')_rS(O)_2NR^{15a}R^{15a'}, \ (CHR')_rNR^{15f}S(O)_2 \ (CHR')_rR^{15b}, \ C_{1-6} \\ haloalkyl, \ C_{2-8} \ alkenyl \ substituted \ with \ 0-3 \ R', \ (CHR')_rphenyl \\ substituted \ with \ 0-3 \ R^{15e}, \ and \ a \ (CH_2)_r-5-10 \ membered \\ heterocyclic \ system \ containing \ 1-4 \ heteroatoms \ selected \\ from \ N, \ O, \ and \ S, \ substituted \ with \ 0-2 \ R^{15e};$ 

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 $\mbox{R}^{\prime}\,,$  at each occurrence, is selected from H, and  $\mbox{C}_{1-6}$  alkyl;

- $R^{15a}$  and  $R^{15a'}$ , at each occurrence, are selected from H,  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-5  $R^{15e}$ , and a  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ;
- $R^{15b}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, a  $(CH_2)_r$ - $C_{3-6}$  carbocyclic residue substituted with 0-3  $R^{15e}$ , and  $(CH_2)_r$ -5-6 membered heterocyclic system containing 1-2 heteroatoms selected from N, O, and S, substituted with 0-2  $R^{15e}$ ; and
- $R^{15e}$ , at each occurrence, is selected from  $C_{1-6}$  alkyl, Cl, F, Br, I, CN,  $(CF_2)_rCF_3$ , and OH.
- 23. The compound of claim 1 wherein the compound is selected from:

```
fluorophenyl) methyl] -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea hydrochloride;
     N-(3-acetylphenyl) - N'-[(2R)-2-[[trans-4-[(4-acetylphenyl)]]]
 5
           fluorophenyl) methyl] -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea hydrochloride;
     N-(3-cyanophenyl)-N'-[(2R)-2-[[trans-4-[(4-cyanophenyl)])]
10
           fluorophenyl) methyl] -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea trifluoroacetate;
     N-(3-cyanophenyl)-N'-[(2R)-2-[[cis-4-[(4-cyanophenyl)]]]
           fluorophenyl) methyl]-1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea trifluoroacetate;
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     N-(3-cyanophenyl)-N'-[(2S)-2-[[trans-4-[(4-cyanophenyl)]]]
           fluorophenyl) methyl] -1-cyclohexyl] amino] - (1S) -1-
           cyclohexyl]urea trifluoroacetate;
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     N-(3-cyanophenyl)-N'-[(2S)-2-[[cis-4-[(4-cyanophenyl)]]]
           fluorophenyl) methyl] -1-cyclohexyl] amino] - (1S) -1-
           cyclohexyl]urea trifluoroacetate;
     N-(3-acetylphenyl)-N'-[(2S)-2-[[trans-4-[(4-acetylphenyl)]]]
25
           fluorophenyl) methyl] -1-cyclohexyl] amino] - (1S) -1-
           cyclohexyl]urea trifluoroacetate;
     N-(3-acetylphenyl)-N'-[(2S)-2-[[cis-4-[(4-acetylphenyl)]]]
30
           fluorophenyl) methyl]-1-cyclohexyl] amino]-(1S)-1-
           cyclohexyl]urea trifluoroacetate;
     N-(3-acetylphenyl)-N'-[(2R)-2-[[(3R)-3-[(4-acetylphenyl)])]
           fluorophenyl) methyl - (1R) -1-cyclohexyl amino - (1R) -1-
           cyclohexyl]urea;
35.
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N-(3-acetylphenyl)-N'-[(2R)-2-[[cis-4-[(4-acetylphenyl)]]]

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fluorophenyl) methyl] - (1S) -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea;
     N-(3-\text{acetylphenyl})-N'-[(2R)-2-[[(3S)-3-[(4-
           fluorophenyl) methyl] - (1R) -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea;
     N-(3-acetylphenyl)-N'-[(2R)-2-[[(3S)-3-[(4-acetylphenyl)])]
           fluorophenyl) methyl] - (1S) -1-cyclohexyl] amino] - (1R) -1-
10
           cyclohexyl]urea;
     N-(4-fluorophenyl)-N'-[(2R)-2-[[(3R)-3-[(4-fluorophenyl)])]
           fluorophenyl) methyl] - (1R) -1-cyclohexyl] amino] - (1R) -1-
15
           cyclohexyl]urea;
     N-(4-fluorophenyl)-N'-[(2R)-2-[[(3R)-3-[(4-fluorophenyl)])]
           fluorophenyl) methyl] - (1S) -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea;
20
     N-(4-fluorophenyl)-N'-[(2R)-2-[[(3S)-3-[(4-fluorophenyl)])]
           fluorophenyl) methyl - (1R) -1-cyclohexyl amino - (1R) -1-
           cyclohexyl]urea;
25
     N-(4-fluorophenyl)-N'-[(2R)-2-[[(3S)-3-[(4-fluorophenyl)])]
           fluorophenyl) methyl] - (1S) -1-cyclohexyl] amino] - (1R) -1-
           cyclohexyl]urea;
     N-(3-acetylphenyl)-N'-((3S,4S)-4-{[4-(4-
           fluorobenzyl)cyclohexyl]amino}tetrahydro-3-furanyl)urea;
30
     N-(3-\text{acetylphenyl})-N'-(\{(2S)-1-[4-(4-
           fluorobenzyl)cyclohexyl]pyrrolidinyl}methyl)urea;
     N-(3-\text{acetylphenyl})-N'-(\{(2S)-1-[4-(4-
35
           fluorobenzyl)cyclohexyl]pyrrolidinyl}methyl)urea;
```

N-(3-acetylphenyl)-N'-[(2R)-2-[[(3R)-3-[(4-acetylphenyl)])]

- N-(3-acetylphenyl)-N'-({(2R)-1-[4-(4-fluorobenzyl)cyclohexyl]pyrrolidinyl}methyl)urea;
- $N-(3-\text{acetylphenyl})-N'-(\{(2R)-1-[4-(4-fluorobenzyl)cyclohexyl]pyrrolidinyl\}methyl)urea;$ 
  - N-(3-acetylphenyl)-N'-{(3R)-1-[4-(4fluorobenzyl)cyclohexyl]pyrrolidinyl}urea;
- 10 N-(3-acetylphenyl)-N'-{(3R)-1-[4-(4-fluorobenzyl)cyclohexyl]pyrrolidinyl}urea;

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- N-(3-acetylphenyl)-N'-{(3S)-1-[4-(4-fluorobenzyl)cyclohexyl]pyrrolidinyl}urea; and
- $N-(3-\text{acetylphenyl})-N'-\{(3S)-1-[4-(4-fluorobenzyl)cyclohexyl]pyrrolidinyl\}urea.$
- 24. A pharmaceutical composition, comprising a20 pharmaceutically acceptable carrier and a therapeutically effective amount of a compound of claim 1.
  - 25. A method for modulation of chemokine receptor activity comprising administering to a patient in need thereof a therapeutically effective amount of a compound of claim 1.
  - 26. A method for treating or preventing inflammatory diseases, comprising administering to a patient in need thereof a therapeutically effective amount of a compound of claim 1.
  - 27. A method for treating or preventing asthma, comprising administering to a patient in need thereof a therapeutically effective amount of a compound of claim 1.